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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/534,221

10/24/2005

Klaus Frommann

HM/625PCT

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EXAMINER

FOGARTY, CAITLIN ANNE

ART UNIT

PAPER NUMBER

4116

MAIL DATE

DELIVERY MODE

01/09/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/534,221	<b>Applicant(s)</b> FROMMANN ET AL.	
	<b>Examiner</b> CAITLIN FOGARTY	<b>Art Unit</b> 4116	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 October 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/6/2005</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Status of Application***

1. Claims 1 – 14 are pending and presented for this examination.

### ***Priority***

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Information Disclosure Statement***

3. The information disclosure statement (IDS) was submitted on May 6, 2005. This submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner. Please refer to applicant's copy of form PTO-1449 submitted herewith.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1 – 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukaya et al. (JP 07-275920).

In regards to claims 1 – 4 and 9, the abstract, paragraphs [0009] to [0012], [0021], [0025] (see English machine translation), and Fig. 1 of Fukaya et al. disclose a method for continuously descaling a metal strip (metal casting), a hot-rolled strip made of stainless steel, where the metal strip is subjected to a pulling roll (stretcher-and-roller level) (9-1) before it is guided in a direction of conveyance through a device inside which it is subjected to plasma descaling. Although it is not specifically mentioned in

Fukaya et al., it would have been obvious to one of ordinary skill in the art that the pulling roll would impart a high degree of flatness to the metal casting because as the metal strip is pulled it will become more flat.

Fukaya et al. differ from instant claims in that they do not specifically mention that a tensile force is exerted such that a tensile stress arises in the metal casting which corresponds to at least 10% of the yield point of the metal casting material. However, it would have been obvious to one of ordinary skill in the art that a tensile force is exerted such that a tensile stress arises in the metal casting because as the metal strip is pulled and rolled a tensile force is exerted on the strip. Also, it would have been obvious to one of ordinary skill in the art to apply enough tensile force to the metal casting to achieve at least 10% of the yield point of the casting metal after routine optimization through experimentation. Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation (see MPEP 2144.05).

Fukaya et al. differ from claim 4 in that they do not disclose that the metal casting is discontinuously guided through the device for plasma descaling. However, it would have been obvious to one of ordinary skill in the art that if the method is performed continuously, it may also be performed discontinuously. For example, if the process is stopped to change the speed or to switch on or off electrodes, it would be performed discontinuously which is within the scope of Fukaya et al.

In regards to claims 5 and 12, dependent on claims 1 and 9, respectively, paragraphs [0020] – [0025] and Fig. 1 of Fukaya et al. teach that the surface roughness

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of the metal strip is inspected after the device for plasma descaling so the process can be adjusted to change the surface roughness of the processed metal strip using the vacuum arc controller (26) and computer (27). Also, Fukaya et al. disclose in [0025] that the processing speed of the method is 10 – 50 mpm. Therefore, the speed with which the metal casting is guided through the device for plasma descaling is specified in the closed-loop control in dependence on the inspection so the desired quality of the descaling may be obtained.

In regards to claims 6, 7, and 13, Fukaya et al. disclose the limitations of claim 1 as discussed above. Fukaya et al. differ from claims 6 and 7 in that they do not teach that after descaling the metal is subjected to heating, in particular induction heating, and then coated with liquid metal, in particular a hot galvanizing. However, it would have been obvious to one of ordinary skill in the art to subject the metal strip to induction heating prior to hot galvanizing because it is a well known way to heat metal and it would be useful in order to prepare the strip for hot galvanizing, which occurs at a higher temperature. Additionally, it would have been obvious to one of ordinary skill in the art to subject the metal strip to hot galvanizing, a common technique for treating stainless steel, following descaling and induction heating because coating the stainless steel strip will make the metal more corrosion resistant and therefore extend the lifetime of the product.

In regards to claims 8 and 14, dependent on claims 1 and 9, respectively, paragraph [0028] of Fukaya et al. teaches that after descaling the metal strip it may be cold-rolled. Therefore, it would have been obvious to one of ordinary skill in the art to

place a device for cold-rolling after the plasma descaling device in the direction of conveyance in order to perform cold-rolling.

Regarding claim 10, dependent on claim 9, paragraph [0020] and Fig. 1 and 2 of Fukaya et al. teach that the device for plasma descaling has a treatment chamber under vacuum inside which a number of modularly built electrodes are arranged in the transit direction of the metal strip.

In regards to claim 11, dependent on claim 10, paragraphs [0020] and [0023] and Fig. 1 and 2 of Fukaya et al. disclose that discharge mode is given to each unit electrode individually and alternatively and therefore, the individual electrodes can be switched on or off independently of one another in dependence on the degree of scaling and/or degree of contamination of the surface of the metal strip and independence on the speed with which the metal strip passes through the plasma device for plasma descaling.

### ***Conclusion***

8. No claim is allowed. All pending claims are rejected.
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CAITLIN FOGARTY whose telephone number is (571)270-3589. The examiner can normally be reached on Monday - Friday 8:00 AM - 5:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vickie Kim can be reached on (571) 272-0579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CF

/Vickie Kim/  
Supervisory Patent Examiner, Art Unit 4116